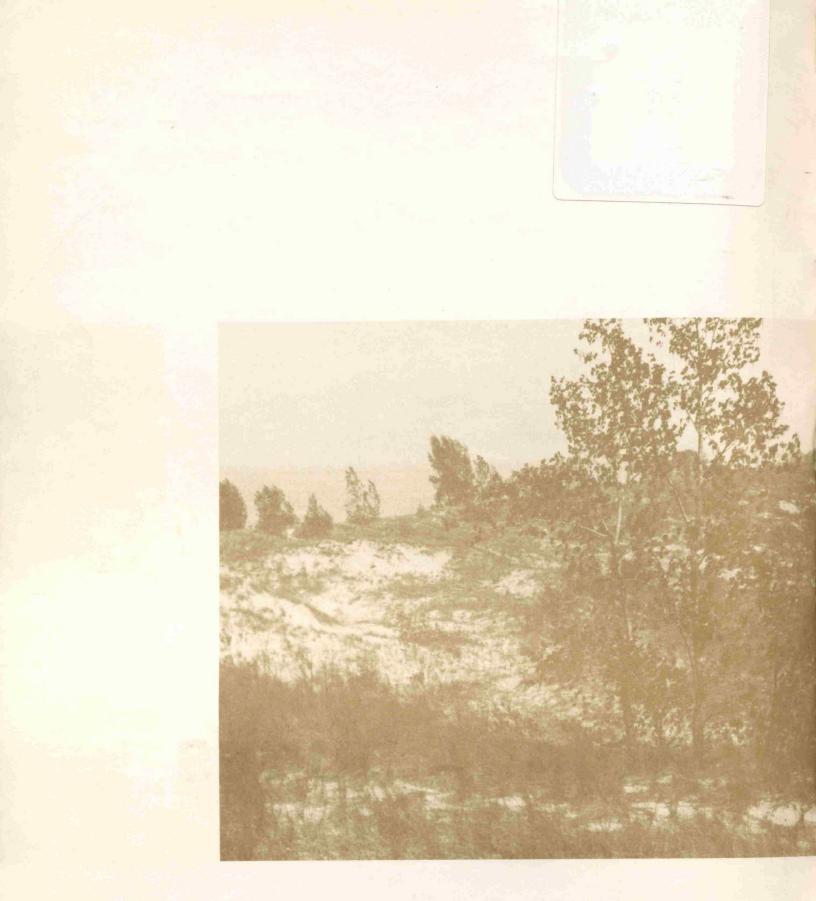
master plan

INDIANA DUNES

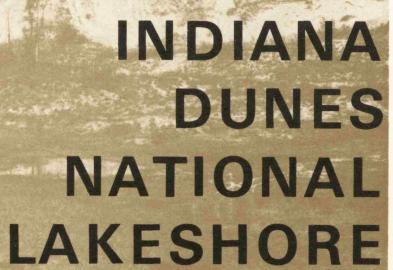


NATIONAL LAKESHORE / INDIANA

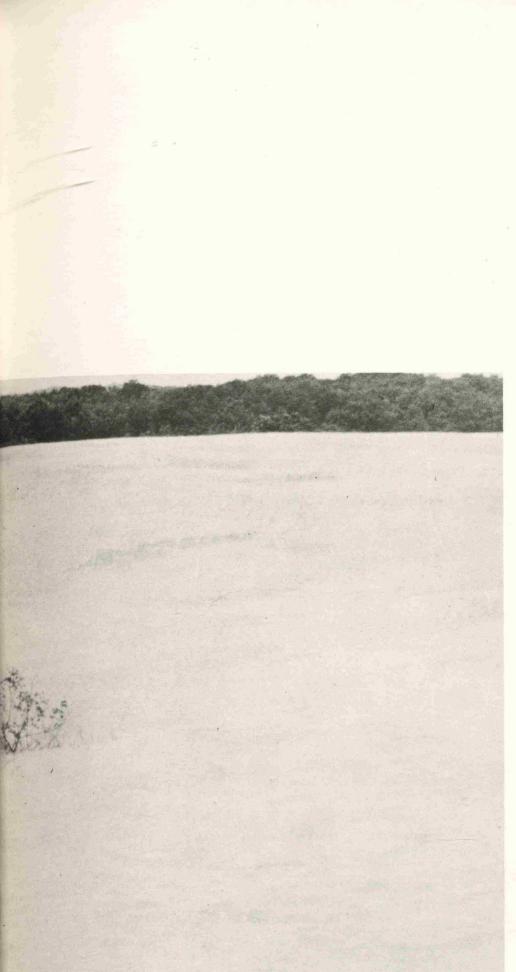
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master plan







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LEMUEL GARRISON REGIONAL DIRECTOR NOVEMBER 1969

SUMMARY

The series of dunes and wetlands remaining from the actions of the great continental glaciers distinguish the Calumet Region at the southern end of Lake Michigan from the extensive but narrower band of dunes along the eastern shore of the lake. Located near Metropolitan Chicago and in the heart of the industrial Midwest, Indiana Dunes National Lakeshore will offer considerable recreation opportunities to teeming urban millions. Providing for these numbers while preserving the basic resources of the area will require great innovation in planning and skill in design.

This plan identifies the land in the lakeshore available for development of public recreation facilities and describes methods of providing access to basically fragile natural areas for a variety of purposes. The use of existing or expanded public transit facilities for visitor access to the Lakeshore from the metropolitan area is encouraged in this plan. A system of on-site central parking, primarily for visitors from beyond

the Calumet Region, is proposed for development in combination with a rapid-rail visitor transportation sytem, which will permit many more people to use the Lakeshore without impairing its resources.

Fragmentation of the land by established developments and transportation corridors is recognized as detrimental to many important objectives of the Lakeshore. If U.S. 12 within the Lakeshore is converted into a park road and a new U.S. 12 relocated southward, much present commuter and commercial traffic will be directed away from the Lakeshore and its important public recreation purposes.

To achieve a cohesive recreation and natural history unit, the plan also recognizes the need to control, or at least influence, developments in the vicinity of the Lakeshore which would otherwise intrude on a spectacular remnant of original America.

The Metropolitan Chicago area will furnish most visitors, with a

wide variety of social, economic, and cultural backgrounds. The recreation uses proposed in this plan will, therefore, provide for a broad spectrum of activity during all seasons.

The primary recreation use will be water sports: boating, swimming, and fishing on Lake Michigan and artifical lakes. Picnicking, organized youth camping, hiking, interpretive trips, bicycling, ice skating, tobogganing and skiing, will be offered at developed areas. Visitor information and orientation services will be available at all important points of use.

Because the State of Indiana wishes to continue its administration of the State Park, this plan outlines a program of joint development and operation of the National Lakeshore between the National Park Service and the Division of State Parks.

All development and operational programs will be coordinated with State, county, and local agencies as well as with appropriate private interests.

BACKGROUND

PURPOSE

Efforts to preserve the Indiana Dunes began as early as 1916. But it was not until 1923 that Indiana Dunes State Park, encompassing some 2,200 acres of dunes and marshland and 3 miles of beach, was established.

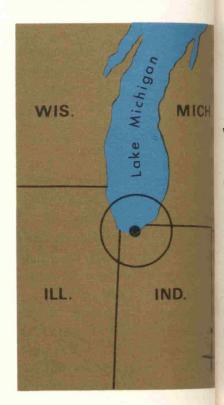
The National Park Service, during its Great Lakes Shoreline Recreation Area Survey, 1957-58, identified the Indiana Dunes area as possessing exceptional value.

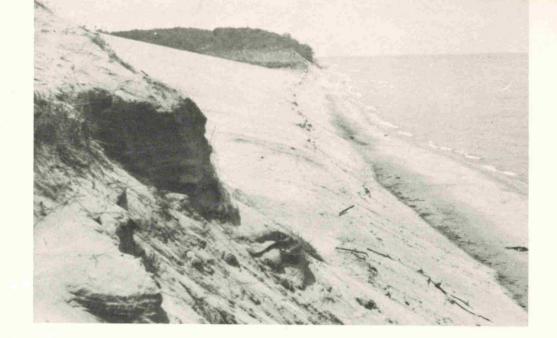
The Advisory Board on National Parks, Historic Sites, Buildings and Monuments supported this proposal in 1958 and in subsequent meetings in 1959, 1960, 1963 and 1965.

Legislation to provide for the preservation of the Indiana Dunes was first introduced in Congress in 1961, and again in 1963 and 1965. On November 5, 1966, Public Law 89-761, authorizing the Secretary of the Interior to establish and administer the Indiana Dunes National Lakeshore, was enacted.

A Master Plan for the Lakeshore was published by the National Park Service in 1967. That plan set out a management and development program based on vehicular access roads and parking to accommodate mass public use while seeking to preserve the important natural and scenic values of the National Lakeshore. Other studies recommended in that plan, have since demonstrated the desirability of departing from traditional development patterns for public access and circulation lest the facilities and services required by the visitor inundate resources that distinguish the Lakeshore. The revised Master Plan presented here reflects the National Park Service's determination to incorporate central parking and mass transportation systems in the planning for the Indiana Dunes National Lakeshore and to involve in this work, to the extent possible, all those public agencies and private interests who share in determining the character of the Calumet Region.

To preserve for the educational, inspirational, and recreational use of the public, certain portions of the Indiana Dunes and other are scenic, scientific, and historic interest and recreational value in the State of Indiana.





OBJECTIVES

MANAGEMENT

The Lakeshore will be managed chiefly for the maximum recreation use consistent with preservation of the dunes complex, associated wetlands, and other features which make the Lakeshore a distinctive and enjoyable place to visit. Park management will be greatly concerned with plans for development on lands adjacent to the Lakeshore and along the shore of Lake Michigan.

VISITOR SERVICES

Facilities for swimming and wateroriented activities, picnicking (but
not camping), and information and
interpretive facilities to include
visitor centers, wayside exhibits and
signs, environmental study areas,
amphitheaters, nature trails and the
like will be provided. All such will
be in harmony with conservation
objectives for the Lakeshore, and in
cooperation with local, State, and
private interests for necessary
support services.

PROTECTION

Special attention will be given to protecting neighboring properties against trespass from park visitors and park resources from damaging encroachments.

EDUCATIONAL USE

To work directly with appropriate authorities in the surrounding communities in developing locally supervised environmental education programs and to stimulate continued ecological studies by qualified agencies and institutions.

COMPREHENSIVE PLANNING

To recognize that regional planning is essential to proper use of the land within the Calumet Region, and to join with others in assisting in this effort.

DESIGN THEME

To develop facilities in a contemporary and functional manner using forms, materials, and colors appropriate to the predominant elements of the Lakeshore—sun, sand, and surf.

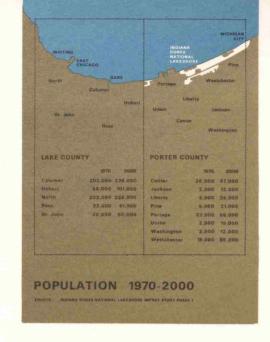
INTERPRETIVE THEME

To portray the drama of the forces, social as well as natural, that have produced the distinctive features of the Lakeshore and its environment and to help visitors understand and appreciate those processes and features.

ACCESS AND CIRCULATION

To encourage the use of public transportation for visitor access to the Lakeshore, particularly from the Metropolitan Chicago area, and to incorporate a visitor circulation plan based on centralized parking and a transit conveyance system.





THE REGION

Indiana Dunes National Lakeshore lies in the eastern half of the Calumet Region, at the southern tip of Lake Michigan. One-third of the region is in the State of Illinois and the remaining two-thirds in the State of Indiana. The region derives its name from the Calumet Rivers (Little and Grand) which, with their tributaries, constitute the basic drainage courses for the region.

The region's most dominant feature is the Chicago Lake Plain, a phenomenally level physiographic unit interrupted only incidentally by three ancient shoreline beaches (the Tolleston, the Calumet and the Glenwood), which rise successively some 20-55 feet above Lake Michigan. Before the 20th century the region was a vast network of bogs, wet prairies and marshes abundant with wild fowl and fur bearing animals. Today it is one of the leading industrial regions of the United States and the world. Beginning at Burns Harbor, situated between the west and east units of the Indiana Dunes National Lakeshore, this overpowering industrial complex includes some 200 industries manufacturing over 1,000 products. It stretches almost uninterruptedly westward for some 35 miles before terminating in Chicago, the Nation's second largest city and its greatest railroad and distributing center.

ACCESS

Major continental highways, 41 major railroads, 5 harbors with access through the St. Lawrence Seaway to the Atlantic Ocean, and Chicago's O'Hare Airport serve the region.

U.S. 12, 20, Ind. 49, Northern Indiana Toll Road I-80 and 90, and Interstate 94 (proposed) pass through or connect with roads which lead directly to the Lakeshore. The Chicago South Shore and South Bend Railroad provides commuter service between Chicago, III., and South Bend, Ind., with regular stops at Ogden Dunes, Dune Acres, Tremont, Beverly Shores, and Pines—all within the Lakeshore.

Some of the existing network of primary and secondary roads which serve the residential complexes in the vicinity will be utilized for access to, and circulation between, the various elements or recreational facilities provided by this plan.

POPULATION

Within this vast industrial and urban complex are five major cities—Gary, Hammond, East Chicago, Whiting (Indiana) and Chicago (Illinois)—and numerous municipalities intermesh. Within their confines almost 7 million people live. An additional 300,000 reside in a number of towns and cities scattered to the rural south and east.

Population density seems certain to increase in the vicinity of the Lakeshore. The growth of this region began in the early 1900's and has continued steadily. It has been estimated that the population of Porter County will double in 24 years, and that of Portage Township

will double in only 10 years. Consequently, it can be anticipated that local and regional use of the Lakeshore will predominate over national use.

PARK AND RECREATION FACILITIES

The Calumet Region, although blessed with some 65 miles of Lake Michigan shoreline, has only 10 available public beaches representing less than 15 miles of shoreline and accommodating less than 250,000 visitors. During period of heavy use, demands for access to these beaches far exceed capacity, and thousands of people are turned away on peak days. The wide discrepancy between the supply of recreation resources and the demand for outdoor recreation opportunities will continue to create tremendous pressure to provide additional capacity for public recreation uses. However, both Indiana and Illinois have plans for supplementing active outdoor recreation facilities in the southern Lake Michigan area.

Published outdoor recreation plans recognize the lack of adequate recreation opportunities for the residents of this region, and emphasize providing additional resources and facilities near population centers. The Indiana plan, for instance, proposes a statewide program that would spend approximately one-third of its recreation funds in the section of the State where the National Lakeshore is located.

These State programs, augmented by similar local efforts, will serve important outdoor recreation needs in this region, supplementing the resources at the Lakeshore. Despite these efforts, the quality of the water and beaches in the Lakeshore, combined with its proximity to residents of the region, will undoubtedly act to create recreation demands beyond the capacity of its resources.

SURROUNDING USE

Indiana Dunes National Lakeshore is surrounded by industrial and resi-

dential developments. Land uses include private summer and year-row residences, sand mining, railroads highways, utility rights-of-way, miscellaneous small commercial establishments, and major industri complexes. Michigan City, Ind., abuts the eastern end of the Lake shore, and Gary, Ind., abuts the western end. A number of income rated towns and communities are located within the Lakeshore and the south. It can be expected the urban developments, stimulated by Burns Harbor Port, will in time or pletely surround the area. Indiana Dunes State Park, managed for a environment preservation and out recreation, is entirely within the authorized boundary of the Nation Lakeshore.

REGIONAL ANALYSIS

Because of the Calumet Region's almost total commitment to indust alization and urbanization, the missignificant contribution Indiana Dunes National Lakeshore will make

the region, and in a sense to the Nation, is to preserve and make available the finest and least disturbed portion of southern Lake Michigan shoreline for public recreation, education, and enjoyment.

In many ways the influence of the Lakeshore on both public and private development will be felt throughout an area that encompasses portions of three States: Illinois, Indiana, and Michigan. This influence will extend to such areas of local interest as the density and types of land uses planned and authorized in the vicinity, the economy of the several nearby jurisdictions, and the type and capacity of public transportation routes provided to serve this region.

As the region continues to develop, the Lakeshore, as a center of mass visitation, will be a determining factor in many decisions affecting nearby land use. Visitors will require not only a means of getting to the Lakeshore, but also certain essential services such as food, supplies, equipment, and accommo-

dations. Except for minimum food services, these will all be provided by private interests outside the Lakeshore's boundary.

Conversely, actions by other agencies and private interests in the region can significantly affect the public purpose of the Lakeshore. Inadequate controls over possible adverse effects from existing and proposed developments in the vicinity can negate efforts to preserve some of the natural quality of this environment.

For example, manmade features extending out from the shore of the Lake will aggravate beach erosion problems such as that along the National Lakeshore west of Michigan City. The Corps of Engineers estimate that this beach is eroding at a rate of 4-1/2 feet per year. Authorities further estimate that the landfill at Burns Harbor will eventually result in an annual loss of some 27,000 cubic yards immediately west of the fill. This will occur

mostly on lands included in the West Beach unit of the Lakeshore.

The National Park Service has recommended a three year study by the Corps of Engineers to investigate and analyze the type of beach existing in the Lakeshore, to study, measure, and identify littoral drift as a factor in beach growth, to investigate and identify other factors contributing to beach creation, maintenance or erosion, and finally to recommend actions to control beach erosion or hasten beach restoration. This proposal will require congressional approval.

Few areas in the National Park System are so intimately concerned with regional plans and development, simply because of the existing and expected density of human occupation in the region and the amount and kind of physical development needed to provide for this population. Effective methods of resolving divergent land use interests will be necessary if the visitor is to be provided the best opportunity for a quality out-

door recreation experience while property owners in the vicinity are assisted in creating an environment to meet the long-range needs of the Calumet Region.

Presently, a framework exists for establishing the relationships needed for wise regional decision making. At the local level, the Lake-Porter County Regional Transportation and Planning Commission's area of responsibility includes the entire Lakeshore. In addition, the Division of State Planning for Indiana is concerned with regional growth patterns that will affect the Lakeshore.

Nationally, planning studies of regional scope are being federally assisted with funds administered by the Department of Housing and Urban Development. Park Service and HUD officials have identified Indiana Dunes National Lakeshore and the surrounding area for planning cooperation under a three-year-program.

The establishment of the National Lakeshore also significantly involves the National Park Service with some nine political subdivisions, many of which face the possibility of massive urban and industrial expansion.

Those severed by or incorporated into the National Lakeshore will require special consideration if they are to continue to function effectively in the regional context. The National Park Service will endeavor to establish a climate of cooperation and to facilitate coordinated planning within and around the Lakeshore in order to guarantee both a vital

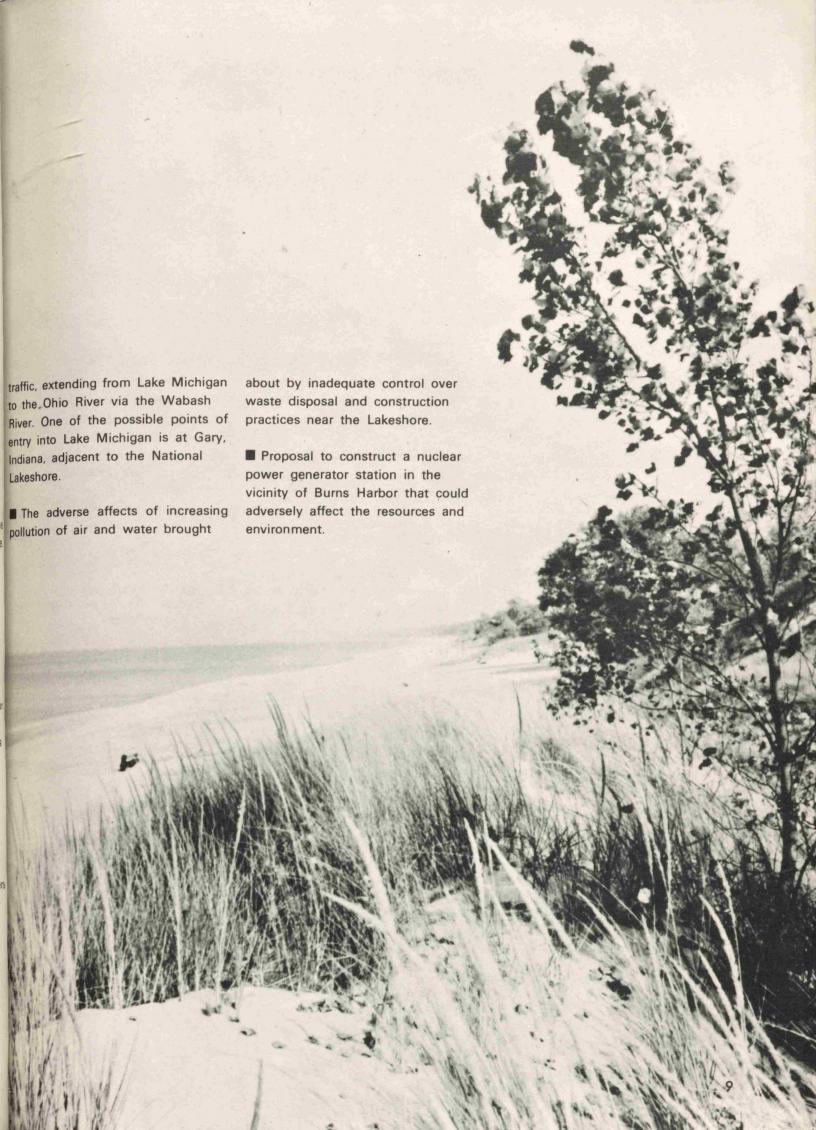
Lakeshore and a vital surrounding environment.

Specific areas of concern to the National Park Service and a coordinated regional planning program are:

- The design, location, and development of transportation routes in the area, both railroad and highway, and the capacity and schedules of public transportation service for both Lakeshore visitors and commuters.
- Expansion or creation of landfills and other facilities along Lake Michigan which interrupt sands,

transported by lake currents, that under natural conditions replenish the beaches and dunes.

- Inadequate and inappropriate zoning in the vicinity of the Lake-shore, leading to land uses which would drain adjacent wetlands or encourage substandard visitor service facilities adjacent to the Lakeshore
- Lack of existing and proposed high density local recreation opportunities within the region in general, and specifically in the developing residential areas surrounding the Lakeshore.
- Need for easements to allow political subdivisions, severed by or incorporated in the Lakeshore, to implement necessary public services to noncontiguous segments.
- Proposals to develop a Chicago regional jetport in the vicinity of the Lakeshore that could result in denying full utilization by the public of its recreation resources.
- Studies of the Corps of Enginees to determine the feasibility of constructing a waterway for barge



THE RESOURCES

DESCRIPTION

Indiana Dunes National Lakeshore has 13 miles of magnificent Lake Michigan shoreline. Offshore, an underwater bench parallels the shore, and depths are as little as 6 feet at distances of 200 to 700 feet from shore. Such shallows make these the warmest waters in Lake Michigan, with temperatures rising from 60 from the latter part of June to September.

Wide, gently sloping beaches, hard packed at the water's edge, stretch back now approximately 200 feet at the western end of the Lakeshore, narrow to 100 feet in the vicinity of the State Park, and eventually diminish to less than 10 feet at the east end of the park.

Beaches are sandy at the western end and tend to become gravelly, then rocky, as one moves eastward toward Michigan City.

Immediately inland from the active beaches, except for the increment west of Ogden Dunes, sand dunes rising to almost 200 feet in a series of blowouts, ridges and valleys, simulating a miniature mountain range, reach back as much as a mile and provide a magnificent backdrop.

West of Ogden Dunes, these dunes were mined in the 1930's and a vast amphitheater of drifting sand reaches inland from the barrier dunes which lie adjacent to the beach.

Inland from the high active dunes of Lake Michigan, and adding variety to the Lakeshore, is a band of stabilized, wooded dunes of the various stages of ancient Lake Chicago, low, gently sloping and interspersed with random, marshy thickets.

South of the Bailly Homestead, the Little Calumet River meanders through a low marshbound valley. A Registered Natural Landmark, Pinhook Bog is an extensive area nestled at the base of steeply pitched, heavily wooded slopes, southeast of the Lakeshore proper.

The drama of the vast lake shore with its many moods-from mirror calm to

pounding waves, bright, hot sun, and sparkling sand, verdant woodland with deep and cooling shade, the brilliance of autumn color, then fore-boding, chilly winds, and finally, driven snow—give profound dimensions to this resource.

EVALUATION

As an important remnant of what we once a vast and unique wetland evolving when the last great continental glacier began its slow retreat some 11,000 years ago, the Indiana Dunes area is set aside not only for its recreation potential, but is worthy of preservation for its intrinsic value— scientific and educational.

The sand dune complex, with the associated wetlands of the National Lakeshore, including 2,200 acres of dunes and wetlands in the Indiana Dunes State Park, represents the finest remaining example of natural resource of its kind in the country.

Because of scientific value, including early plant succession (see studies conducted here), existing natural features would have considerable significance wherever they might occur. Also, the proximity of the Chicago metropolitan area, with its expanding residential, industrial and transportation developments threatening to engulf the dunes, makes this resource of inestimable significance.

Unfortunately, except for the features mentioned above, much of the land within the boundary of the National Lakeshore contains only altered remnants of the features which make this region unique. Trapping, logging, mining, industrialization, and finally, urbanization have reduced the natural and historic resources to that of a supporting role.

The most significant of the recreation resources of Indiana Dunes
National Lakeshore are the wide
beaches and warm and shallow waters,
unexcelled on the Great Lakes. When
imaginatively developed, they will

provide important water-øriented recreation for the growing urban population of the region.

Swimming and sunbathing will be most popular, but for some visitors, gently sloping sand expanses will provide a magnificent setting for relaxing in surroundings that contrast with their daily environment.

Adjacent to the beaches, high dunes provide a scenic backdrop as well as an opportunity for a variety of other activities, such as picnicking, hiking, and active sports. Contrasting views of Lake Michigan to the north, Valparaiso Moraine to the south, and industrial Gary to the west are rewards for an exhilarating climb to the dune tops.

Pinhook and Cowles Bogs, as well as all other remaining natural resources, furnish an outdoor laboratory for scientific study and enjoyment of plant and animal life.

The low, wooded dunes of the inland portion of the National Lakeshore

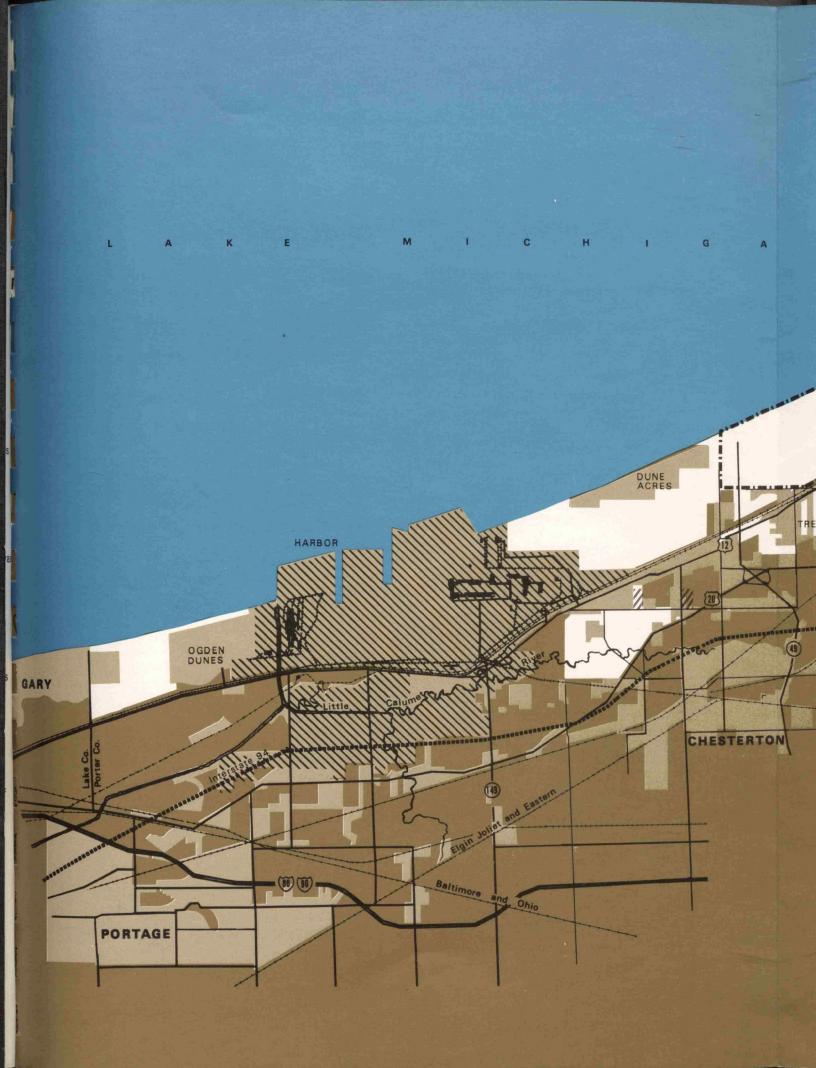
provide opportunity for short-term organized camping.

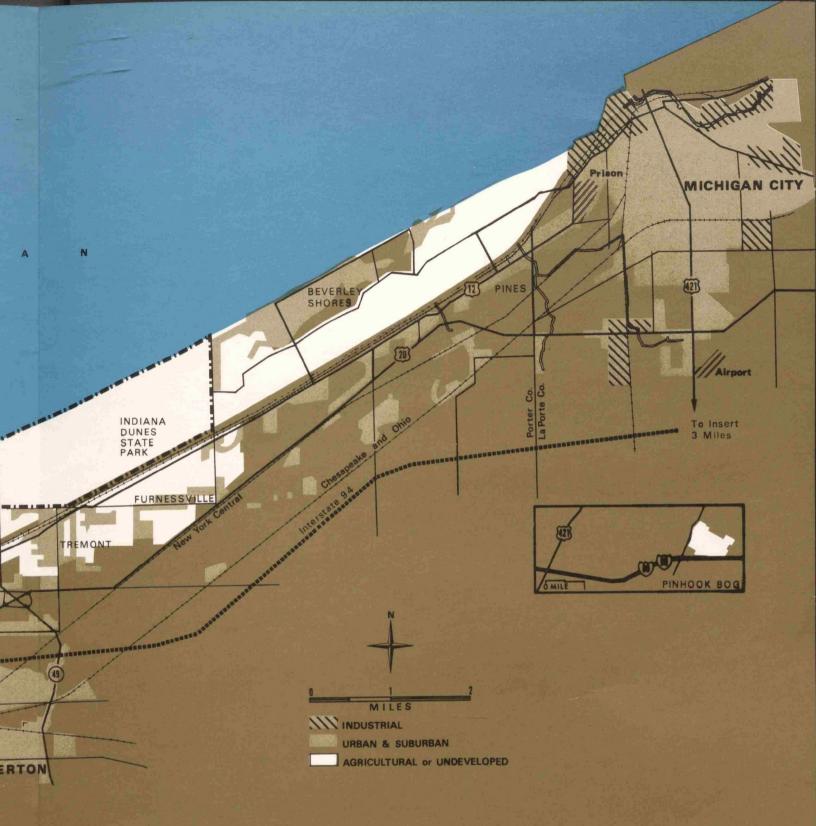
Historic Bailly Homestead adds interest to the area.

The now polluted Little Calumet River will, when cleaned up, provide additional recreation and educational opportunities.

HISTORY

The dunelands of Indiana became a maze of highways and railways. This was a natural consequence of its geographic position along the southern shore of Lake Michigan. Trails and roads have crisscrossed the area since early times. An important trail used by the Indians in their travels from the Green Bay area to Detroit-Lake St. Clair area ran along the shore of the Lake. A second, the north branch of the Sauk Trail, connected the Mississippi River with Lake Michigan, A third trail, still in evidence today, winding through the dunes, was used by Indians traveling north to





LAND USE

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Mackinac. A fourth route was the Chicago-Detroit road, constructed along high ground in the 1830's. This today is essentially the route followed by U.S. Highway 12.

Indians, missionaries, trappers, traders, and settlers moved into the region over these trails and roads. Joseph Baille (later anglicized to Bailly), a French-Canadian, was the first settler in northwestern Indiana. He built a trading post along the Little Calumet River in 1822. A few of the structures remain, but are somewhat altered. The homestead is within the boundary of Indiana Dunes National Lakeshore.

A small fort was erected by the French in the early 1750's at the mouth of Dune Creek. This lies within the Indiana Dunes State Park. A plaque marks the probable site of the fort, which was abandoned in 1780.

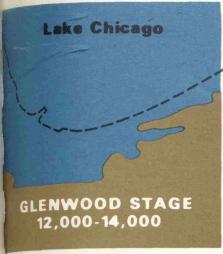
Division of the Northwest Territory by Ordinance of 1787, provided that the Indiana boundary line extend eastward from the southernmost point of Lake Michigan. However, the Indiana Enabling Act of 1816, placed the line at 10 miles further north into what was then part of the Michigan Territory. Although the old Ordinance Line (passing through the National Lakeshore area) was disputed for 20 years, it was not changed. Too wet for successful farming, the land's future commercial value could not be envisioned. It remained largely unsettled until the early 1900's when land unsuited for farming suddenly became ideal for the needs of an emerging Industrial America. Today, "Calumet" is one of the great industrial regions of the world.

GEOLOGY

The Wisconsin Ice Sheet, last of the great Pleistocene glacial stages which spread across North-Central United States, filling and overflowing the basin of present-day Lake Michigan, set the stage for the distinctive development of the Calumet Region in general, and Indiana Dunes National Lakeshore in particular.

When the progress of the glacier stopped, south of the National Lakeshore, it released a massive unsorted mixture of sand, gravel and boulders to form a prominent row of hills, known as the Valparaiso Moraine. This massive "earth dike" impounded the meltwater of the receding ice front, creating prehistoric Lake Michigan (or Lake Chicago).

Changing rates of melting, movements of the earth's crust or possibly breaks in the moraine, resulted in three major fluctuations of the lake's level. The ancient shorelines and their associated dune systems which developed at each of these stages are visible within the boundary of Indiana Dunes National Lakeshore. The most ancient of these lake stages existed some 12,000 to 14,000 years ago. This shoreline paralleled the northern edge of the Valparaiso Moraine and is referred to as the Glenwood Stage. It lies mostly south of the National Lakeshore but is found in places from a point west of Furnessville, extending southwestward through the southern part of Tremont Day Use Area into the eastern portion of Bailly



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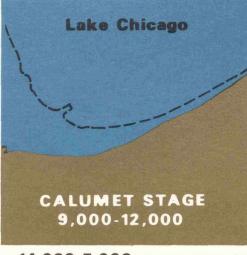
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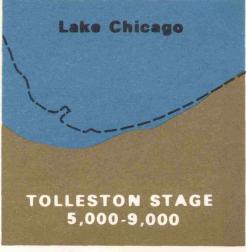
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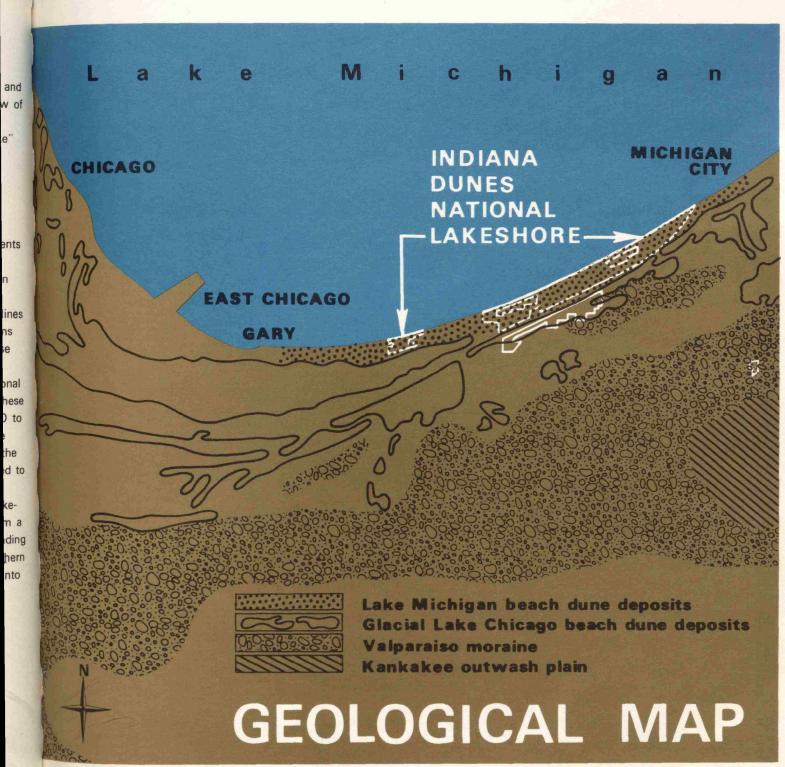
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rehistoric glacial periods from 14,000-5,000 years ago to present-day Lake Michigan.



Homestead area. Dunes formed during this stage appear as a 1/4-mile belt of low, wooded, elongated sandhills.

The Calumet Stage existed some 9,000 to 12,000 years ago. This shoreline, referred to as the Calumet Ridge, is 20 feet lower than the Glenwood and lies north of and parallel to the Calumet River. Within the National Lakeshore it is the roadbed of U.S. 12 from Michigan City to a point south of the proposed Burns Harbor Waterway. Dunes associated with this shoreline can be identified as a ridge of low, wooded, complex sandhills.

The Tolleston Stage existed some 5,000 to 9,000 years ago. The shore-line and dunes associated with this phase within the National Lakeshore can scarcely be distinguished from dunes of the latest stage of Lake Michigan. They are, in fact, overrun by these from the vicinity of Burns Ditch through Indiana Dunes State Park and northeastward into La Porte County. The dunes closest to the shoreline are correlated with phases of the present stage of Lake

Michigan. This complex of dunes was once a mile wide in the vicinity of Gary, Ind., and gradually narrowed to a half mile at the Michigan State line.

Lake currents moving generally southward carry sand to the south and east shores of Lake Michigan, where it is washed onto the beaches. Once dried, the prevailing westerly winds blow the sands inland to form ridges and eventually dunes. Deposition begins wherever the force of the wind is broken by obstructions, such as grasses, shrubs, trees, and manmade structures. Vegetation and moisture tend to fix the sand in place, but fixation is often temporary and incomplete. During severe storms even old dunes may be breached and the sand blown away to form characteristic "blowouts." Dunes may drift 60 feet per year, engulfing forests and structures. However, on the average, active dunes, such as "old Baldy," located in the eastern corner of the National Lakeshore, will advance about 4-1/2 feet per year. As a result of such movement, a dune complex appears as a confused

assemblage of hills and hollows. In general, the dunes of present Lake distribution are active dunes, growing and moving. The more ancient dune formed during earlier lake stages, are largely covered by mature vegetation and are stable or inactive.

FLORA

The Indiana Dunes region has been the scene of three great floral migrations following the retreat of the Wisconsin Ice Sheet. The first plant invaders were those species now characteristic of the far north Next came a period of sharp continen s tal warming and drying that results in the development of the Prairie Peninsula across the Lake States. In the past few thousand years, deciduous forest has come to occur almost all of this former grassland. Within the National Lakeshore are found plant communities derived for e all three of these floral eras. In certain bogs small relict strands of tamarack and white-cedar date from the time of the earliest forest invasion. Dry dune tops and flats support prickly pear and other

prairie species in profusion. Mature dune ridges and swales, well back from the lake, are forested with oak, maple, and beech of the contemporary deciduous forest. Marshes, ponds and Little Calumet River bottomlands add a host of species to the inventory, and the general flora is the most diverse in the Great Lakes vicinity.

Originally, white pine was one of the principal tree species of the older dunes. Ninteenth century lumbering activities all but eliminated this species but it still persists in small numbers. Black oak is the ubiquitous tree of the stable dunes today, occurring in stunted open strands. Overstory trees of the oldest dune ridges include such oakhickory staples as white oak, shagbark hickory, sassafras, black gum, yellow poplar, American beech, etc. Cottonwood is the principal pioneer of dune stabilization but disappears from the well-established woodlands.

As the parallel line of dunes increases in age, with distance from the "live" sands of the lake edge,

the Indiana Dunes comprise a natural laboratory of plant succession. Dr. H.C. Cowles, Dr. V.E. Shelford and other biologists of 50 to 70 years ago developed theories of succession and plant distribution based on observations in these very dunelands. The theories, propounded before the word "ecology" was more than a curiosity, are today's natural laws for the science of ecology. These circumstances alone have made the Indiana Dunes internationally famous. The themes and evidences of plant succession will provide an outstanding interpretive opportunity for National Lakeshore naturalists and visitors of the future.

FAUNA

The fauna of the Indiana Dunes is diverse. A number of mammals and reptiles entered the area via the Prairie Peninsula. Salamanders, reptiles, birds and insects find a haven in the bogs and marshes. Birdlife is extremely varied and between 250 and 300 species of birds have been observed as residents, migrants,

summer or winter visitors, or accidentals. The position of the dunes at the southern tip of Lake Michigan insures flights of shore birds, waterfowl and land birds along its shores. The variety of natural environments attract a large number of nesting and resident species.

Inland the variety of environmental niches found in all the units makes this region an important habitat for wildlife. Deer, fox, raccoon, beaver and rabbit still find a suitable environment and are some of the obvious examples of the 40-odd mammals that can be expected in the region.

Pinhook Bog contains many species of songbirds, as well as mammals, amphibians and reptiles. Among insects, the dunes termite, the bearberry aphid and the bearberry leafhopper are found nowhere else in the State of Indiana. The white tiger beetle and seaside locust, which are sand colored for camouflage are characteristic of the dunes, although not restricted in the area.



THE PLAN

DEVELOPMENT CHARACTER AND PHILOSOPHY

The preservation of those natural values in the Lakeshore which contribute to the attractiveness of the area for recreational uses requires that the most stable parts of the Lakeshore be reserved for public use and that management plans and design controls be exercised over the remaining parts that are most susceptible to loss of their inherent scenic and scientific qualities.

This plan is based on the conclusion that building adequate conventional access, service roads, and parking areas would cause unwarranted destruction of the Lakeshore's resources. To increase the visitation capacity without impairing natural qualities, centralized fringe parking and a rapid-rail visitor transportation system must, therefore, be developed. Visitors will also be encouraged to use public transit services to reach the Lakeshore rather than automobiles.

It cannot be determined at this time to what degree pollutants from developments now underway in the vicinity of the Lakeshore will affect the ecology of the area and, consequently, its important recreational and scientific features. As the development and industrialization of northwest Indiana continues, this pollution will become more acute and must be added to the impact that will result from expected mass visitation. The Lakeshore offers only limited opportunity for high-capacity, public-use developments. When the "improved property" undisturbed dunes and wetlands are removed, only about 1.000 acres, out of a total of 8.271 are available for development. This limited usable land is also fragmented by marshes and dunes, which restricts access to and circulation within use areas. The developable land is largely composed of fragile, ancient, stabilized sand dunes. Development, therefore, must not only provide for adequate and meaningful use, but it must also be the means by which a limited and depleted resource can be gradually restored.

To effectively preserve this unusua q complex of sand dunes and wetle d with its diverse flora and fauna. influence of the National Park Service should ideally extend bew the presently authorized boundaries As the guardians of a considerable equity, the Service should attempt alleviate any adverse affects on the Lakeshore from proposed construct or activities in the vicinity. The Park Service, working with local jurisdictions and regional planning agencies, will thus seek, through appropriate actions, to limit nearly developments and uses which are incompatible with the primary purposes of the National Lakeshor

Architecturally, the design of facilities for the Lakeshore will reflect the surrounding expanding urban environment. Bold and stimulating use of materials and texture will complement strong sculptural forms to create an exciting visual experience at public-use areas, when visitor density will be controlled to limiting the capacity of facilities. Thus, the open and green space



quality of the Lakeshore will not be diminished by spreading developments and uses throughout the whole of the Lakeshore.

The priorities for constructing facilities will be determined by the need to provide for mass public use of the water and water-related resources of the Lakeshore. These developments will be limited to those necessary to either serve appropriate public day-use activities or to control their impact on the fragile areas within the Lakeshore. Most of the visitor's needs for services, supplies, and accommodations can be furnished by nearby private businesses, and there will be no need to include such activities as family camping within the Lakeshore.

ACCESS AND CIRCULATION

The transportation network which serves the established industrial and urban complexes in the vicinity tends to divide up the National Lakeshore and hinder the development of an independent system to serve the needs of the visitor.

Visitors who arrive by auto will compete with traffic already straining the capacity of the existing road network. Further port development, the full operation of industrial facilities, new commercial enterprises, and residential expansion in the area will compound the problem of access to the Lakeshore from all directions, but primarily from Metropolitan Chicago. The present U.S. 12, proposed to be reconstructed as a 4-lane highway, is the most disruptive element in the entire road network. As now planned it would create a barrier between public use activities by directing an increasing stream of traffic (industrial, commercial, and commuter), through recreation areas.

What is needed is a complete redesign of the entire transportation system for the region. The first step in such a plan should be the relocation of existing U.S. 12 south of the Lakeshore, as shown on the General Development Plan. Once this is accomplished, U.S. 12, within the Lakeshore, will become a park road



effectively tying together the use areas now separated by it. Much of the local and residential traffic now using primary and secondary roads in the Lakeshore can, without undo inconvenience or expense, be redirected to alternate routes. A detailed study of local circulation needs in cooperation with local jurisdictions will identify the most effective system for this area, including those roads that should be closed to traffic in the Lakeshore.

Visitor circulation within the Lakeshore is to be provided primarily by construction of a minitrain system and the establishment of shuttle bus routes. Visitors will be able to reach all of the use areas, without worrying about traffic. Parking garages, rather than parking lots, located either on the fringe or outside of use areas and at minitrain or shuttle bus stops, will conserve the limited space available for development and further reduce vehicular congestion on park roads.

The Chicago, South Shore and South Bend Railroad has expressed interest in providing rail service to the Lakeshore. If visitors, encouraged by improved transit facilities and National Park Service development programs, make the maximum use of the railroad, the need for large parking areas will decrease and there will be a corresponding reduction in vehicular congestion. A plan for relocating and rehabilitating the present train stops will be worked out with the Chicago, South Shore and South Bend Railroad, State Park officials, and local communities in order to improve rail access to the high-use areas and the residential enclaves within the Lakeshore.

Complete engineering and economic feasibility data by which the efficiency and effectiveness of these proposed access and circulation

systems could be evaluated are not now available. The detailed studies and site planning necessary before construction work actually begins on such transportation systems will undoubtedly mean interim visitor access and parking areas will be required. Such interim developments will connect with existing public roads leading to the several use areas. The capacity of these temporary facilities will necessarily be geared to the amount of traffic that can be directed to the Lakeshore over the available road network, provided that the size and location of these facilities are not permitted to encroach on resources of the Lakeshore which will be needed for other public uses once the circulation and parking plan is put in operation. Consequently, no developments, construction of facilities or earth shaping activities will be undertaken except on those sites identified for such purposes in this Master Plan and subsequently approved Area Development Plans.

Finally, it will be necessary to utilize privately operated excursion

boats between Chicago and the Lakeshore to relieve traffic congestion on the local road network. In addition to conventional boats, the use of hovercraft and hydrofoils will be investigated for this service.

This means of access will be provided, however, only if further feasibility studies indicate that a marina type operation can be developed as discussed for the Beverly Shores Use Area or a pier can be designed and constructed at the State Park which will not contribute to the beach erosion problem.

Other access from Lake Michigan will be regulated to prevent indiscriminate beaching of private watercraft from creating a hazard to other approved public uses. Sections of the Lakeshore shall be designated for such informal beaching of private boats. One section in the Mt. Baldy area will allow access to nearby formal and informal picnicking sites near Mt. Baldy. A second section of beach between the town of Dune Acres and the Northern Indiana Public Service Company's power plant will

be similarly designated. But this location, which is an integral part of the Cowles Bog complex, will have no comfort stations or formal picnic sites.

ORIENTATION AND INFORMATION

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Recause the National Lakeshore exists as a group of isolated facilities within a green open space surrounded by developments, and is served by a road system not intended for recreation use, one of the Lakeshore's most difficult problems will be to direct visitors to facilities and keep them away from local communities. Close cooperation with the State Highway Department is needed to provide signs at all entry points. Support from State, county, and municipal law enforcement agencies is also needed so that extra manpower can be provided during periods of peak visitation.

Once the visitor has reached the Lakeshore, he will need an opportunity to find out what he can see and there. An orientation/information facility to provide such information

will be located within each use area, as shown on the General Development Plan. Self-guiding facilities, selectively located at other areas, will provide additional orientation and information. A well thought-out and efficiently run information program, utilizing exhibits, publications, and personal contacts, will greatly assist visitors and minimize the chances of trespassing on private property next to or within the Lakeshore.

Facilities for swimming and other water activities, hiking, bicycling and similar activities, picnicking (but not camping), nature trails and the like, will be provided.

INTERPRETATION

A large amount of relatively unaltered natural landscape in the Lakeshore lies within the State Park. Included among other important natural resources are such areas as Pinhook Bog, Cowles Bog (both Registered Natural Landmarks), and the dune complex and associated wetlands. Evidence of man's occupation and use

of such natural resources is also amply available both within the Lakeshore and on adjacent areas. Consequently, if visitors are to fully understand and appreciate the Lakeshore, the Park Service must coordinate its interpretive efforts with those of the State and other interests.

The main visitor facility, located within the Tremont Triangle Area, will present the story of the environmental forces and processes which created the Indiana Dunes and are still at work here and show how man has altered the land and frequently has had to adapt his works to the physical realities of the region. This part of the interpretive program, if skillfully done, will serve as a foundation for understanding and appreciating specific natural and historical sites.

A principal feature of this program will be regular environmental and nature study activities developed jointly with State and local school officials. While management of the resources and the provision of the



public facilities in each environmental study area will be the responsibility of the National Park Service, program execution will be the responsibility of the cooperating school system. The two environmental education study areas operated under this program will incorporate parts of both the State Park and the National Lakeshore.

Each area will have a separate headquarters to provide space for administrative functions and comfort facilities. Trails leading to the various natural features within the State Park and the surrounding National Lakeshore will originate in the vicinity.

Other trails will lead to the existing geological exhibits that are remnants of the shorelines of ancient Lake Chicago during three successive lake stages. These trails will pass through the dunes and wetlands where the drama of dune creation, movement, and stabilization will be displayed along with the variety and diversity of plant life representing three

major plant communities that have evolved since the retreat of the Wisconsin Ice Sheet.

The Bailly Homestead is the most historically significant feature in the Lakeshore. This site marks the beginning of the settlement of northwest Indiana. Here the story of man's adaptation of those qualities and characteristics of the region that stimulated travel and trading can be told against the background of an evolving urban environment.

RECREATION FACILITIES (See General Development Plan)

West Beach Use Area ..This is the main Lakeshore unit and the only proposed large, mass-use beach area outside the State Park. To provide for the maximum intensity of use within a limited area, a specially designed system of access, circulation, and parking will be developed.

Concentration of visitor services and parking combined with a convenient and economical mass-transportation

system to distribute visitors to various points of interest (beach, lake, picnic sites, winter sport facilities) will conserve the limited land for additional public use.

Major elements in this area will be:

- Visitor contact and orientation facility with food service, administrative, and maintenance space;
- Parking;
- Minitrain terminal and circulation system;
- Beach bathhouses;
- Boating, fishing, ice skating and swimming;
- Combined bath-skate house:
- Sled, toboggan, ski facilities, and related structures.

Bailly Homestead .. Contact Station—A visitor contact station for this use area will be located off U.S. 20 near

the Little Calumet River. This can be a self-service facility to serve as an information and orientation point for visitors arriving from the south.

Day Camp—The facilities at the existing youth camp, though modest, appear to be fairly well-maintained. However, to provide adequate facilities for anticipated needs, it will be necessary to extensively rehabilitate and modify existing buildings and to construct a number of new buildings. The area should be used for day-camp activities for organized scouting groups, boys clubs, neighborhood youth groups, church groups, groups of handicapped children, educational study groups, and others.

Short-term overnight camping, as a training experience for organized youth groups, should also be permitted.

Bailly Homestead—The homestead and trading post, as a significant part of the history of the development of the Calumet Region, will be rehabilitated to create a historically accurate scene of the period when it was most active. This will include a portion of the original homestead grounds and the nearby shores of the Little Calumet River. The Bailly Cemetery on U.S. 12 will also be rehabilitated. Access for vehicles and parking will be provided for both the interpretive program and picnicking. Picnic sites and comfort facilities will be located away from the immediate vicinity of the homestead site. A trail will connect this use area with Headquarters and the Tremont Day Use Area.

Little Calumet River—If pollution can be controlled in the river, shoreline improvements, such as dock and boat launching areas with canoe and boat rental concessions, would be constructed. There would also be picnic sites, hiking trails, and facilities for other riverside related activities.

Tremont Day Use Area ...Contact Station—A contact station, for the

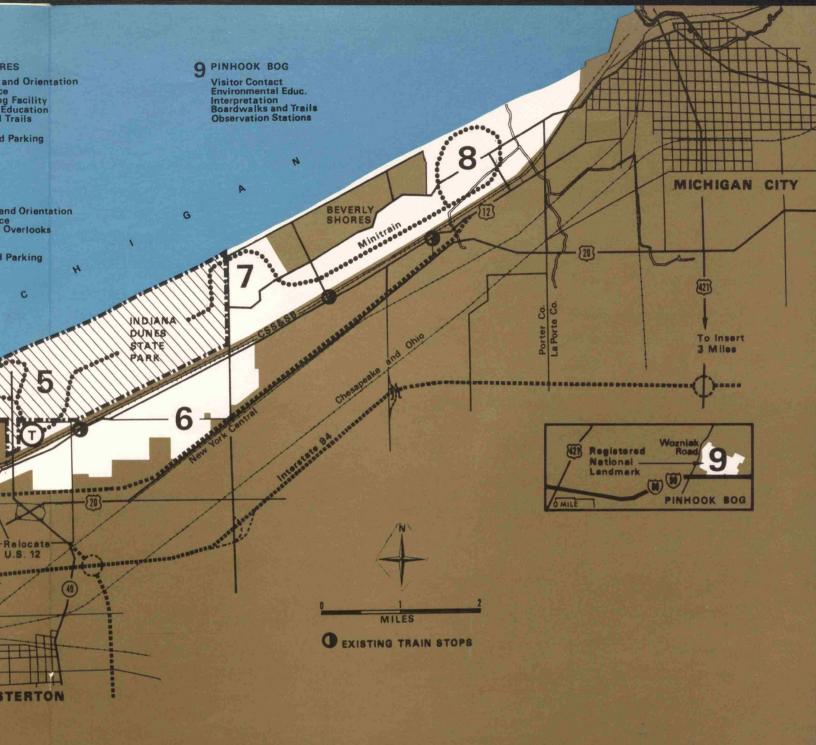
orientation of visitors will be located at the eastern end of this use area near Furnessville. This point will be the eastern terminus of the main park road, when it is converted from the present U.S. 12.

Picnic and Day Use—South of present U.S. 12, the land is generally 20 to 50 feet higher than the wetlands area between the highway and the dunes. This area will be reserved for day-use activities. Facilities needed would include a number of family and group picnic areas with access roads, limited parking areas, comfort stations, and utilities.

There would also be playing fields for softball, soccer, handball, shelter and pavilion structures, multiuse paved areas for volleyball and court games and bicycle, hiking, nature and interpretive trails. The playing fields and game areas will be designed as ancillary uses of the picnic areas.

Man-Made Lakes—The locations of three small recreation lakes

TREMONT-HEADQUARTERS BEVERLY SHORES WEST BEACH Visitor Contact and Orientation Parking Facility 2000 Cars Max. Minitrain Terminal Snack Service Lake 150 Acres Beach and Lake Swimming Facilities Ski and Toboggan Slides Lake Boating and Fishing Ice Skating on Lake Picnic Sites 300 Visitor Contact and Orientation Minitrain Service Beach Swimming Facility Environmental Education Boardwalks and Trails Picnic Sites 75 Access Road and Parking & STATE PARK Lakeshore-Visitor Contact and Orientation National Lakeshore Hdqtrs. Interpretation Minitrain Terminal T Shuttle Bus Station Parking Facility 4000 Cars Max. State Park-Beach Swimming Facility Picnic Sites – Family and Group Camping – Transient and Group Minitrain Service Access Road and Parking 8 MT. BALDY **Visitor Contact and Orientation** BAILLY HOMESTEAD Minitrain Service Boardwalks and Overlooks Entrance Station and Orientation Historic Rehabilitation Interpretation Hiking and Bicycle Trails Organized Youth Camp 500 Capacity Boat and Canoe Facilities Picnic Sites 120 Access Road and Parking Interpretation Picnic Sites 150 Access Road and Parking 6 TREMONT DAY USE AREA Shuttle Bus Service Group Picnicking 780 Capacity Family Picnic Sites 250 Lakes 250 Acres Swimming and Ice Skating Facilities Lake Boating and Fishing Hiking and Bicycle Trails Field and Court Games Interpretation Maintenance Center Access Road and Parking COWLES BOG M Environmental Educ. Interpretation Boardwalks and Trails Observation Stations DUNE 4 PORTER BEACH Registered Beach Swimming Facility Access Road and Parking National BURNS Landmark Bethlehem Steel 2 Minitrain Midwes OGDEN a Little interstate 94 S CHESTERTON Baltimore (80) (90) MITH Ohio PORTAGE INDIANA



DUNES NATIONAL LAKESHORE deneral Development Plan

are to be identified, subject to favorable feasibility studies on the soil and water. Each lake will be equipped with combination bath-skate house with related facilities. The swimming portion of the lake will be separated as at the West Beach Area. Concessioners will provide boats, canoes, fishing equipment, and ice skates for rental.

Circulation—The existing road system in this area will be utilized wherever appropriate, but as many through roads, as possible, will be eliminated. Separate hiking and bicycle trails will be developed throughout the area for recreational and interpretive purposes. To provide transportation to the various facilities that are proposed in this area for visitors, a concessionmanaged shuttle bus will be operated along a loop route through the area. This system will terminate at the station to be constructed as a part of the major parking facility in the Tremont Headquarters Area.

Maintenance Headquarters—The maintenance facilities for the Lake-

shore will be headquartered in the eastern part of this area, south of U.S. 12. One additional satelite maintenance unit will be necessary at the West Beach area as part of the main visitor center.

Mt. Baldy Use Area ..This is primarily an interpretative area, with picnicking permitted where the dunes are stabilized by vegetation or where protection of the dunes can be provided by use of boardwalks or other devices.

The major attraction here is the active shifting sand dune, Mt. Baldy. Along the shoreline, erosion has almost completely cut away the beach. The high dunes slope steeply down to the water's edge where there is just room for a trail. In addition to the minitrain service, boardwalks and trails will lead to overlooks and picnic areas. There will be conventional entrance roads and parking areas to serve the eastern portion of Mt. Baldy area.

Beverly Shores Use Area ..Environmental Study—The erosion occurring in the Mt. Baldy Area diminishes along the shoreline west of Beverly Beach, and a narrow, though useable beach, exists between the town and the State Park. The dune area in back of the beach has been moderately disturbed by road construction and some residential development. This area, however, combined with the low wetlands south of the dunes, contains a variety of natural resources along with evidence of man's influence, and will be an important environmental study area.

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Bathing—Limited beach use, accessible by both minitrain service and a conventional park access road, will be controlled to prevent over-use and encroachment on the undisturbed environment in the State Park and the residential area at Beverly Shores.

Headquarters and State Park ..

Tremont Triangle—In this area will be located the major visitor contact structure and parking garage with provision for auto and bus parking, interpretive programs, administration offices, snack bar, comfort stations,

maintenance facilities, minitrain terminal and shuttle bus station. In addition, there will be located in this area an environmental study building with access road, parking area, and trails to the various environmental study areas in Cowles Bog and the State Park. Minitrain loops will originate at the terminal and proceed north into the State Park beach area and east through the State Park to Mt. Baldy and Beverly Shores.

Indiana Dunes State Park-Another large, mass-use beach area, similar to West Beach, will be located in the Indiana Dunes State Park when preliminary plans are completed by the State's Division of State Parks. Temporarily, access will be provided by the present entrance road. An enlarged parking facility which, in the first stage of the State Park improvement program will hold about 1,750 cars, the replacement of the existing beach pavilion, and the construction of two new pavilions are the main improvements proposed for the State Park.

Additional facilities to serve picnicking, both group and family, as well as camping, are included in plans for completing developments at the main beach complex of the State Park. It is understood, however, that further plans for developments by the State will await completion of studies for the minitrain transportation system.

Porter Beach ..This area consists of a small community bathing beach just to the west of the State Park. The proposed development will include removal of the existing structures, restoration of the protective foredune, limited beach bathing and related support facilities. A conventional park access road and parking will also be provided.

Cowles Bog .. The Bog, a Registered Natural Landmark, was named for Dr. Henry C. Cowles, who is credited with first stating the natural laws upon which the modern science of ecology is founded. Since this area contains some of the lands studied by Dr. Cowles and his contemporaries in

formulating his theories, it has considerable significance from both an interpretive and a scientific point-of-view.

Few areas in the world have been so continuously studied by scientists over such a long period of time. The opportunity is available to develop, in conjunction with an environmental education program, a valuable natural science research station here which could be operated under a cooperative agreement with a college, university, or a national scientific organization. Therefore, no developments or activities will be permitted in the area except those necessary to preserve the ecology of the bog or the minimal necessary to facilitate interpretation, environmental education, scientific observation, and research. Such developments will be limited to primitive trails, elevated boardwalks and wildlife observation stations until such time as technology can provide assurance that an alternate method of access will contribute to protection of ecological values.

Pinhook Bog ..This area, like Cowles Bog, is a Registered Natural Landmark. Except for visitor contact and parking, public use will be without any developments except those needed to facilitate interpretation, environmental education, scientific observation, and research: primitive trails, elevated boardwalks and wildlife observation stations.

RECREATION CAPACITY

Because the population is expanding and outdoor recreational opportunities are restricted in the Calumet Region as well as in the National Lakeshore, the potential number of visitors at peak times cannot be adequately handled.

Control must be exercised over visitors in private motor vehicles at access points of use areas to prohibit entry when capacity has been reached. To do this, the cooperation of State and local law enforcement and traffic control agencies must be sought. A series of National Lakeshore "status reports" broadcast from regional radio and TV stations might

be one way to control visits. Such regularly scheduled reports would advise listeners whether picnic sites or parking spaces are available, would note weather conditions at the Lakeshore, suggest the least congested routes to reach the area, give some mention of the visitor services being provided, and give overall assistance in keeping people from driving to the Lakeshore if it were already filled to capacity. Active use of all of the facilities provided for in this plan, both in the State Park and in the Lakeshore, will permit a maximum visitation of about 87,000 persons a day.

DUAL OPERATION

Public Law 89-761 specifically states that the Secretary of the Interior can only acquire Indiana Dunes State Park by donation. The State of Indiana has expressed a desire to continue operating the Indiana Dunes State Park. Therefore, interim operations of lands within the established boundary of the National Lakeshore will require immediate attention.

While it should not be obvious to visitors that two separate administrative programs exist, both the State Park and the National Lakeshore should retain their identities as long as Indiana continues to administer the park property. The coordination of the development and operations of each park area, therefore, needs to be carried out at all levels of administrative responsibility, including planning, project design, construction, budgeting, interpretation, regulations, public relations, maintenance, and visitor protection.

Without close cooperation, there will probably be much duplication of staff and services which will unjustifiably increase the cost of operating the National Lakeshore. At this time there have been no in-depth discussions between officials of the Park Service and the Division of State Parks of Indiana to establish points of agreement on these considerations. Desirable program coordination may not be possible under existing authorizations, but to secure the necessary

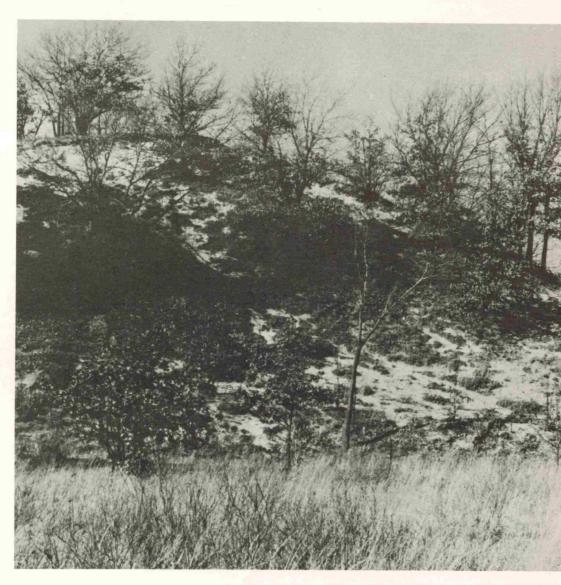
legislative actions to achieve this objective will seriously delay developing adequate public use facilities.

Given these realities, it would be appropriate to reach agreement for the division of management responsibilities along program lines rather than by property lines. Authority exists for the Park Service to exchange property within the authorized boundary of the Lakeshore when such an exchange would result in improved service to the public.

LAND CLASSIFICATION

Lands in the National Lakeshore are classified according to the National Park Service's classification system for recreation category parks. This system has been adapted from the six land classes developed by the Outdoor Recreation Resources Review Commission and adopted by the Bureau of Outdoor Recreation for uniform application to Federal recreation lands.

Class I—High Density Recreation, approximately 1,156 acres.



The only lands in the Lakeshore classified for this use are those that have been severely altered from their natural condition by man's activities or are contiguous to such altered areas. Further development of these areas for heavy public use will not contribute significantly to loss of natural, scenic, or scientific values. There are two sections of the Lakeshore so classified. One is the West Beach Area which has been heavily sand mined. The second is the developed portion of the State Park plus adjacent land presently utilized, in part, for residential purposes.

Class II—General Outdoor Recreation, approximately 2,770 acres.

These lands generally contain evidence of man's occupation, but this disturbance has not resulted in a sufficient impact that would preclude restoration of the land's natural qualities. Two types of land in the Lakeshore are classified for general recreation use. The first is the section of dunes and beach on either end of the Town of Beverly

Shores where past subdivision activity has left an area somewhat altered by limited development but still possessing a pleasant environment for public use. The second is the combination of lowlands and gently rolling, stabilized dunes south of U.S. 12. In the past, this area has been subjected to agricultural and residential uses. Both of these types of National Lakeshore lands will require careful and limited development of public use activities in order to insure continued availability of their scenic and recreational values.

Class III—Natural Environment, approximately 3,060 acres.

The beaches, dramatic dunes, and interesting wetlands, which contribute most to the scenic quality of the lakeshore are included in this classification. These lands are also most susceptible to irreversible damage if public use is not strictly managed and controlled. They include the beaches not designated for swimming, the spectacular dunes and

wetlands of the State Park, and the Mount Baldy Area where the best remaining example of an active dune is located.

Class IV—Outstanding Natural, approximately 1,275 acres.

The two Registered Natural Landmarks, Pinhook Bog and Cowles Bog, are included in this classification. The Cowles Bog Landmark, however, does not include the entire bog and the related dune formations that were, in part, responsible for the bog and now help perpetuate this outstanding outdoor laboratory. Therefore, the section of beach and dunes west of Dune Acres that are integral parts of the formation which created Cowles Bog, are also designated in this class.

Class V—Primitive, none.

Class VI—Historic and Cultural, approximately 10 acres.

Both Bailly Homestead and Cemetery, plus a sufficient area within which a historically accurate scene can be preserved, are included in this classification.

CLASS 2 **GENERAL OUTDOOR RECREATION** NATURAL ENVIRONMENT CLASS 3 **OUTSTANDING NATURAL** CLASS 4 CLASS 6 HISTORICAL AND CULTURAL MICHIGAN LAKE BEVERLY SHORES DUNE 3 OGDEN DUNES

HIGH DENSITY RECREATION

CLASS 1

PINHOOK

CLASSIFICATION AS NOTED:

Provides for maximum public use as well as protection of the remaining natural resources for scientific, educational and recreation purposes.

LAND CLASSIFICATION

INDU-20,004

EXISTING CONDITIONS

CLIMATE

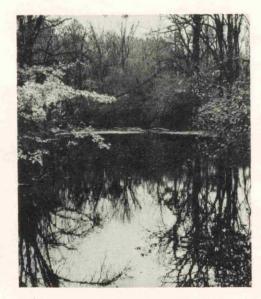
Indiana Dunes National Lakeshore possesses a continental type climate which is considerably modified by the presence of Lake Michigan. Winds off the lake cause many chilly days in the spring, but in the summer this cooling influence is welcome. Precipitation, totaling about 36 inches annually, is evenly distributed throughout the year. Snowfall, measurable amounts of which may occur from October through April, totals about 47 inches each year. The highest temperature recorded to date was 103°, while the lowest was minus 15°.

Thunderstorms, occasionally severe, occur most frequently in July but have been observed in all months. The highest wind velocities during the warm season have all resulted from thundersqualls. These present a real threat to small craft on the lake and will require special consideration in managing boating, bathing and beach activities. Although the prevailing winds are from the south,

the highest winds are those from the west and northwest. A high velocity of 78 m.p.h. was recorded in nearby Gary, on November 26, 1950. Winds from any direction will cause drifting sand in unstable areas and create a removal problem on roads, trails, and parking areas. Tornados, hailstorms, and fog occur infrequently.

TERRAIN-SOILS

The terrain within the Lakeshore is primarily marsh-bound lowlands



interrupted successively by three sand-ridge complexes. The most distinctive of these are the dunes which parallel and rise abruptly some 200 feet from the lakefront beaches. Although most spectacular, they limit access to the beaches to natural openings. The remaining two wooded sand ridges, seldom over 20 feet high, occur inland and are stable. They provide the best sites available for development.

Intermingling with these, and in a majority, are wetlands which provide buffer for the use areas and opportunity for interpretation. Except for the wetlands, light sandy soil is found throughout the area on the dunes adjacent to the Lakeshore. Organic material is thin or nonexistent throughout the entire area. The water table is near the surface and will present problems in construction and sewage disposal. The characteristic sandy soil is susceptible to both wind and water erosion, and compaction quickly disturbs the ground covers. Special treatment,

such as topsoil, pavement, boardwalks or plantings will be required in heavy use areas.

UTILITIES

Electric Power. The Northern Indiana Public Service Company operates major electrical generating plants at Michigan City and at Burns Harbor. From these generating plants overhead distribution lines serve the surrounding area. A major primary transmission line runs parallel and adjacent to Route 12 and could readily furnish power for the entire Lakeshore.

Gas. The Northern Indiana Public Service Company furnishes the area through mains that run the length of the Lakeshore parallel and adjacent to Route 12.

Telephone. The Bell Telephone Company of Indiana and the General Telephone Company of Indiana furnish telephone service to the area. These companies provide telephone service by interlocking transmission line along Route 12 and 20 with branch overhead lines into developed areas.

Sewerage. Sewage disposal in the general vicinity is less than adequate. Pollution from domestic and industrial wastes are prevalent. In general, septic tanks and disposal fields are utilized.

A municipal disposal plant is available at Michigan City, and although overloaded at present, an expansion is programmed.

Water Supply. Existing systems:

- Shallow Wells. Used principally for individual homes and small businesses isolated from organized districts.
- Deep Wells. Primarily used by town water districts that are removed from the lakefront.
- Withdrawal from Lake Michigan. Michigan City and the Gary-Hobart Water Corporation

utilize such a system. Water from this system is available for Use Area 1.

■ Infiltration Galleries.

Used in the Indiana Dunes State

Park basically for summer use.

The possible use of existing water supply and sewage disposal systems to provide for the intermittent and varying demands of proposed use areas need to be investigated. Except as previously noted, municipal water and sewer systems will not be immediately available in the capacity and location that will make it feasible to utilize such services to handle the needs of the Lakeshore. As the industrial and residential development of the Calumet Region continues, however, it is expected that additional municipal services will be installed and made available. Therefore, in the meantime, alternate methods of providing for these services in the Lakeshore must be studied and evaluated before developed area plans are completed for each Use Area.

FACTORS AFFECTING RESOURCES AND THEIR USE

LEGAL

The Act of November 5, 1966 (Public Law 80-761) contains limitations and restrictions of land acquisition which in a real sense limit and control the development and administration of the Lakeshore. The most pertinent are summarized below:

- Sec.2 The Secretary is directed to negotiate with the State of Indiana for acquisition of Indiana Dunes State Park (2,182 acres) but can only acquire same by donation.
- Sec.4 Suspends the Secretary's authority to acquire by condemnation all improved property for all times when a duly adopted and approved zoning ordinance is in force, except where such property is adjacent to any beach or water. In this case, the Secretary can condemn certain lands deemed necessary for public access and use.
- Sec.5 Directs the Secretary to issue regulations specifying standards to be adhered to in drawing up zoning ordinances. Such standards should: (1) Prohibit commercial and industrial use other than that approved by him, (2) promote preservation and development in accordance with purpose of the Act.
- Sec.6 Provides that owners of property acquired by the Secretary may under certain conditions continue to occupy the property for a period of 25 years.
- Sec.7 Provides that the Secretary may develop for appropriate public use portions of the Lakeshore he deems especially adaptable for such use.
- Sec.8 Established an Indiana Dunes
 National Lakeshore Advisory
 Commission.
- Sec.10 States that \$27,900,000 is authorized to be appropriated for land acquisition. Jurisdiction will be proprietary.

COMMITMENTS MADE DURING HEARINGS

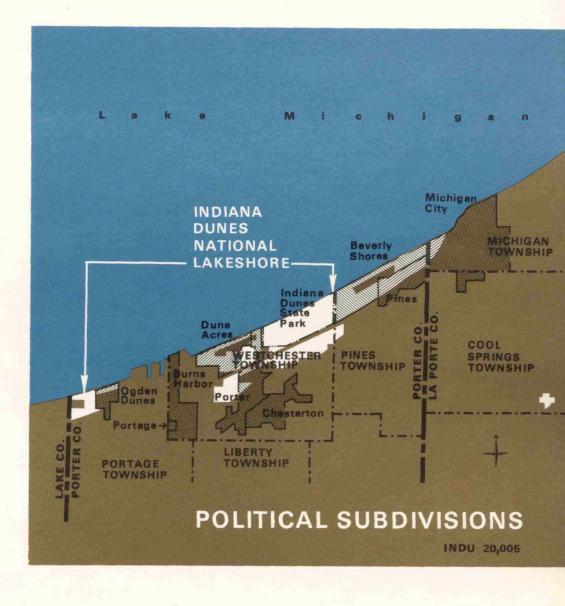
Within the approved development schedule, lands are to be acquired in the following priority:

- Undeveloped property, giving priority to that having access to the Lake Michigan shoreline.
- The entire undeveloped beach in front of towns, except Ogden Dunes beach which will be the last acquisition in this priority. Furthermore, only that portion of beach from the shoreline to the toe of the dunes will be acquired at Ogden Dunes and Dune Acres. In addition, an easement will be taken over that portion of beach owned by the Hobart Water Corporation at the west end of Ogden Dunes.
- Developed property, subject to limitations in the bill.

Special attention will be given throughout the entire land acquisition program to voluntary offers of sale, especially where early acquisition would prevent a hardship to the owner.

The Committee on Interior and Insular Affairs, House of Representatives, will be notified of the need for grade separations if these are required in the interest of public safety or to facilitate administration. The National Park Service may contract for services such as police and fire protection of such value commensurate with the services rendered and in a manner consistent with good administration of the National Lakeshore.

Improved property is defined as: A detached one-family dwelling, construction of which was begun before January 4, 1965. (Such property is restricted to no more than 3 acres of land).





Public Law 89-761 89th Congress, S. 360 November 5, 1966

An Act

80 STAT, 1309

To provide for the establishment of the Indiana Dunes National Lakeshore, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana dunes and other areas of scenic, scientific, and historic interest and recreational value in the State of Indiana, the Secretary of the Interior is authorized to establish and administer the Indiana Dunes National Lakeshore (hereinafter referred to as the "lakeshore") in accordance with the provisions of this Act. The lakeshore shall comprise the area within the boundaries delineated on a map identified as "A Proposed Indiana Dunes National Lakeshore", dated September 1966, and bearing the number "LNPNE-1008-ID", which map is on file and available for public inspection in the office of the Director of the National Park Service,

Department of the Interior.

Sec. 2. (a) Within the boundaries of the lakeshore the Secretary of the Interior (hereinafter referred to as the "Secretary") is authorized to acquire lands, waters, and other property, or any interest therein, by donation, purchase with donated or appropriated funds, exchange, or otherwise. The Indiana Dunes State Park may be acquired only by donation of the State of Indiana, and the Secretary is hereby directed to negotiate with the State for the acquisition of said park. In exercising his authority to acquire property by exchange for the purposes of this Act, the Secretary may accept title to non-Federal property located within the area described in section 1 of this Act and convey to the grantor of such property any federally owned property under the jurisdiction of the Secretary which he classifies as suitable for exchange or other disposal within the State of Indiana or Illinois. Properties so exchanged shall be approximately equal in fair market value, as determined by the Secretary who may, in his discretion, base his determination on an independent appraisal obtained by him: Provided, That the Secretary may accept cash from or pay cash to the grantor in such an exchange in order to equalize the values of the properties exchanged.

(b) In exercising his authority to acquire property under subsection Contracts. (a) of this section, the Secretary may enter into contracts requiring the expenditure, when appropriated, of funds authorized to be appropriated by section 10 of this Act, but the liability of the United States under any such contract shall be contingent on the appropriation of funds sufficient to fulfill the obligations thereby incurred.

SEC. 3. As soon as practicable after the effective date of this Act and following the acquisition by the Secretary of an acreage within the boundaries of the area described in section 1 of this Act which in his opinion is efficiently administrable for the purposes of this Act, he shall establish the Indiana Dunes National Lakeshore by publication of notice thereof in the Federal Register. Following such establishment and subject to the limitations and conditions prescribed in section 1 hereof, the Secretary may continue to acquire lands and interests in lands for the lakeshore.

SEC. 4. (a) The Secretary's authority to acquire property by condemnation shall be suspended with respect to all improved property located within the boundaries of the lakeshore during all times when an appropriate zoning agency shall have in force and applicable to such property a duly adopted, valid zoning ordinance approved by the Secretary in accordance with the provisions of section 5 of this

Indiana Dunes National Sea-Establishment.

Acquisition of lands, authorization.

Boundaries. Publication in Federal

Condemned property. 80 STAT. 1310

"Improved property."

Standards.

(b) The term "improved property", whenever used in this Act, shall mean a detached, one-family dwelling, construction of which was begun before January 4, 1965, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the lands so designated. The amount of land so designated shall in every case be not more than three acres in area, and in making such designation the Secretary shall take into account the manner of noncommercial residential use in which the dwelling and land have customarily been enjoyed: Provided, That the Secretary may exclude from the land so designated any beach or waters, together with so much of the land adjoining such beach or waters, as he may deem necessary for public

access thereto or public use thereof.

SEC. 5. (a) As soon as practicable after enactment of this Act, the Secretary shall issue regulations specifying standards for approval by him of zoning ordinances for the purposes of sections 4 and 6 of this Act. The Secretary may issue amended regulations specifying standards for approval by him of zoning ordinances whenever he shall consider such amended regulations to be desirable due to changed or unforeseen conditions. The Secretary shall approve any zoning ordinance and any amendment to any approved zoning ordinance sub-mitted to him which conforms to the standards contained in the regulations in effect at the time of adoption of such ordinance or amendment by the zoning agency. Such approval shall not be withdrawn or revoked, by issuance of any amended regulations after the date of such approval, for so long as such ordinance or amendment remains in effect as approved.

(b) The standards specified in such regulations and amended regulations for approval of any zoning ordinance or zoning ordinance amendment shall contribute to the effect of (1) prohibiting the commercial and industrial use, other than any commercial or industrial use which is permitted by the Secretary, of all property covered by the ordinance within the boundaries of the lakeshore; and (2) promoting the preservation and development, in accordance with the purposes of this Act, of the area covered by the ordinance within the lakeshore by means of acreage, frontage, and setback requirements and other provisions which may be required by such regulations to be included in a zoning ordinance consistent with the laws of the State

of Indiana.

(c) No zoning ordinance or amendment thereof shall be approved by the Secretary which (1) contains any provision which he may consider adverse to the preservation and development, in accordance with the purposes of this Act, of the area comprising the lakeshore; or (2) fails to have the effect of providing that the Secretary shall receive notice of any variance granted under and any exception made to the

application of such ordinance or amendment.

(d) If any improved property, with respect to which the Secretary's authority to acquire by condemnation has been suspended according to the provisions of this Act, is made the subject of a variance under or exception to such zoning ordinance, or is subjected to any use, which variance, exception, or use fails to conform to or is inconsistent with any applicable standard contained in regulations issued pursuant to this section and in effect at the time of passage of such ordinance, the Secretary may, in his discretion, terminate the suspension of his authority to acquire such improved property by condemnation.

(e) The Secretary shall furnish to any party in interest requesting the same a certificate indicating, with respect to any property located within the lakeshore as to which the Secretary's authority to acquire such property by condemnation has been suspended in accordance with provisions of this Act, that such authority has been so suspended and the reasons therefor.

- 3 -

SEC. 6. (a) Any owner or owners of improved property on the date Owners of imof its acquisition by the Secretary may, as a condition to such acquisition, retain the right of use and occupancy of the improved property for noncommercial residential purposes for a term of twenty-five years, or for such lesser time as the said owner or owners may elect at the time of acquisition by the Secretary. Where any such owner retains a right of use and occupancy as herein provided, such right during its existence may be conveyed or leased for noncommercial residential purposes. The Secretary shall pay to the owner the fair market value of the property on the date of such acquisition, less the fair market value on

such date of the right retained by the owner.

(b) The Secretary shall have authority to terminate any right of Termination use and occupancy retained as provided in subsection (a) of this right of Sec section at any time after the date upon which any use occurs with respect to such property which fails to conform or is in any manner opposed to or inconsistent with the applicable standards contained in regulations issued pursuant to section 5 of this Act and which is in effect on said date: Provided, That no use which is in conformity with the provisions of a zoning ordinance approved in accordance with said section 5 and applicable to such property shall be held to fail to conform or be opposed to or inconsistent with any such standard. In the event the Secretary terminates a right of use and occupancy under this subsection, he shall pay to the owner of the right so terminated an amount equal to the fair market value of the portion of said right which remained unexpired on the date of termination.

Sec. 7. (a) In the administration of the lakeshore the Secretary may utilize such statutory authorities relating to areas of the national park system and such statutory authority otherwise available to him for the conservation and management of natural resources as he deems

appropriate to carry out the purposes of this Act.

(b) In order that the lakeshore shall be permanently preserved in its present state, no development or plan for the convenience of visitors shall be undertaken therein which would be incompatible with the preservation of the unique flora and fauna or the physiographic conditions now prevailing or with the preservation of such historic sites and structures as the Secretary may designate: Provided, That the Secretary may provide for the public enjoyment and understanding of the unique natural, historic, and scientific features within the lakeshore by establishing such trails, observation points, and exhibits and providing such services as he may deem desirable for such public enjoyment and understanding: *Provided further*, That the Secretary may develop for appropriate public uses such portions of the lakeshore as he deems especially adaptable for such uses.

SEC. 8. (a) There is hereby established an Indiana Dunes National Lakeshore Advisory Commission. Said Commission shall terminate ten years after the date of establishment of the national lakeshore

pursuant to this Act.

(b) The Commission shall be composed of seven members, each appointed for a term of two years by the Secretary, as follows: (1) one member who is a year-round resident of Porter County to be appointed from recommendations made by the commissioners of such county; (2) one member who is a year-round resident of the town of Beverly Shores to be appointed from the recommendations made by

proved property, reten-

right of Sec-

Indiana Dunes National Lakeshore Advisory Commission. Membership.

the board of trustees of such town; (3) one member who is a yearround resident of the towns of Porter, Dune Acres, Portage, Pines, Chesterton, Ogden Dunes, or the village of Tremont, such member to be appointed from recommendations made by the boards of trustees or the trustee of the affected town or township; (4) one member who is a year-round resident of the city of Michigan City to be appointed from recommendations made by such city; (5) two members to be appointed from recommendations made by the Governor of the State of Indiana; and (6) one member to be designated by the Secretary.

(c) The Secretary shall designate one member to be Chairman. Any vacancy in the Commission shall be filled in the same manner in which

the original appointment was made.

(d) A member of the Commission shall serve without compensation as such. The Secretary is authorized to pay the expense reasonably incurred by the Commission in carrying out its responsibilities under this Act on vouchers signed by the Chairman.

(e) The Secretary or his designee shall, from time to time, consult with the Commission with respect to matters relating to the development of the Indiana Dunes National Lakeshore and with respect to

the provisions of sections 4, 5, and 6 of this Act.

SEC. 9. Nothing in this Act shall deprive the State of Indiana or any political subdivision thereof of its civil and criminal jurisdiction over persons found, acts performed, and offenses committed within the boundaries of the Indiana Dunes National Lakeshore or of its right to tax persons, corporations, franchises, or other non-Federal property on lands included therein.

Sec. 10. There are hereby authorized to be appropriated not more than \$27,900,000 for the acquisition of land and interests in land pur-

suant to this Act. Approved November 5, 1966.

Crimes and offenses, jurisdiction.

Appropriation.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 1782 accompanying H.R. 51 (Comm. on Interior & Insular Affairs).

SENATE REPORT No. 334 (Comm. on Interior & Insular Affairs). CONGRESSIONAL RECORD:

Vol. 111 (1965):

June 21, considered and passed Senate.

Vol. 112 (1966): Oct. 11, 12, considered in House.

Oct. 14, considered and passed House, amended, in lieu of H.R. 51.

Oct. 18, Senate concurred in House amendment.

BIBLIOGRAPHY

Many books and magazine articles have been written about the human history and natural history of the Indiana Dunes region. Most of them are out of print or otherwise unavailable except at libraries and/or museums. The following is a selected list of references. A more complete list was included in the original master plan report.

- Anson, Dr. Bert. 1953. The Fur Traders in Northern Indiana 1796-1850. Typed mss., Library of Indiana University.
- Ball, T.H. 1897. Some Notice of Streams, Springs, Wells and Sand Ridges in Lake County, Indiana. Proc. Ind. Acad. Sci. 1896:73:75.
- Bretz, J.H. Geology of the Chicago Region. State of Illinois Geol. Survey, Urbana. 1939-1955. (in two parts, may be obtained by writing to the State of Illinois)
- Cannon, T.N. and H.H. Loring, C.J.

 Robb. 1927 History of the Lake
 and Calumet Region of Indiana.
 Historian's Assoc., Indianapolis,
 Ind.

PLANNING TEAM*

- Cowles, Dr. Henry Chandler. 1899.
 The Ecological Relations of the Vegetation of the Sand Dunes of Lake Michigan. Bot. Baz. 27:95-117, 167-202, 281-308, 361-391.
- Downing, Eliot Rowland. 1922.

 Naturalist in the Great Lakes

 Region. Univ. of Chicago Press.
- McAllister, J. Gilbert. 1932. The Archeology of Porter County, Ind. Hist. Bull. X:14.
- Olson, J.S. 1958. Lake Michigan
 Dune Development. 2. Plants as
 Agents and Tools in Geomorphology Journal of Geol. Vol. 66,
 No. 4, July 1958. pp. 345-351.
- Peattie, D.C. 1926. Flora of the Indiana Dunes. A handbook of the flowering plants and ferns of the Lake Michigan coast of Indiana and of the Calumet district.

 Field Museum of Natural History.
 Chicago. 432 pp., 38 figs.
- Schienmann, Olga M. 1965. From a Bailly Point of View. A collection of historical anecdotes (copy at Valparaiso Court House Museum). Duneland Hist. Soc. Vol. II, No. 3, Jan. 1965.

This plan is largely a rewrite of the Master Plan approved on October 25. 1967, and prepared under the direction of Team Captain David Turello. It is based on a Development Concept Study prepared by the Office of Development Planning and Project Control, Design and Construction. Philadelphia Service Center in August, 1968 under the direction of Landscape Architect Eugene DeSilets. Assisting in that study were Architect Thomas F. Herr, Design and Construction, Western Service Center, and Landscape Architect David E. Schmidt, Philadelphia Service Center.

Consequently, a planning team in the usual sense, was not organized for this study. Contributions, criticism and advice were furnished from many sources but this plan is the responsibility of Team Captain Leroy A. Rowell, who was assisted by several of the staff of the Office of Resource Planning, Washington Service Center.

*Prior to reorganization of December 1969.

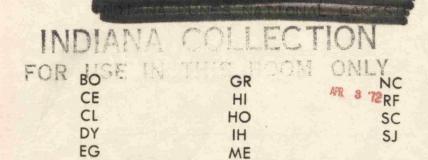


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Indiana Dunes National Lakeshore master plan

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